

CHAPTER 8

ROADWAY CONSTRUCTION INSPECTION, SAFETY REQUIREMENTS AND MATERIALS TESTING

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REQUIREMENTS AND MATERIALS TESTING

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CHAPTER 8
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8.1 GENERAL

8.1.1 Protection of Work and Property

The Developer shall be responsible for all violations of Town ordinances and state laws involved in the performance of his/her work; and for obstruction of streets, sidewalks, alleys, and pavements, and shall in all cases make good any damage to any streets, sidewalks, alleys and pavements. He/she shall use every precaution to brace and otherwise support and secure the structural member and trench walls during the construction of the work; and shall provide, during the progress of his/her work, every and all safeguards and protection against accidents, injury and damage to persons and property including adjoining property. The Developer shall be responsible for his/her work and every part thereof, and for all materials, tools, appliances and property of every description used in connection therewith.

Accident Prevention. Precaution shall be exercised at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws, ordinances, building and construction codes shall be observed. Machinery, equipment and all hazards shall be guarded or eliminated in accordance with the safety provisions or the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not in contravention with applicable laws and O.S.H.A.

8.1.2 PROJECT MANAGEMENT COORDINATION

The Developer shall give personal supervision to the work, using his/her best skill and attention, and shall keep a competent Foreman and necessary assistants constantly on the job site. The Foreman shall be, the personal representative of the Developer and all directions given by him/her shall be as binding as if given by the Developer.

The Developer shall carefully study and compare all drawings, specifications, and other instructions, and where dimensions are governed by existing conditions or by conditions already established, he/she shall make actual measurements himself/herself and shall report in writing to the Engineer, within 10 days of the receipt of the drawings, specifications and instructions for explanation or adjustment, any errors, disagreements or inconsistencies in the drawings and specifications or figured dimensions of the drawing which may exist or appear to exist, before proceeding to execute that part of the work affected thereby. Failure to do so shall constitute a waiver of all right to or claim for extra work on such account.

8.2 QUALITY ASSURANCE

(Procedures to assure quality of construction)

8.2.1 General

These Regulations state the minimum requirements for materials sampling, testing, and inspection. All tests shall be made and certified by an approved testing laboratory. The Developer shall be responsible for retaining a qualified Engineer for material testing. All costs required and pertaining to testing the work performed and materials supplied, to verify compliance with these Regulations, shall be the responsibility of the Developer. All re-testing shall be at the Developer's expense. Where certified test reports are required to be furnished by the Manufacturer, the Developer shall furnish duplicate copies of the reports to the Inspector before the material will be approved for use.

The use of a Testing Agency's services does not relieve the Developer of the responsibility to furnish the required materials and to perform the required construction in full compliance with the Specifications. Passing test results do not constitute acceptance of the work or materials represented by the test. The Developer is responsible for quality control of his/her work.

In various sections of these Regulations, specific testing or other data is required to be provided by the Developer to insure that the intent of these Regulations is fulfilled. The costs of such tests or other specific data, where required by these Regulations or on the approved plans, shall be borne by the Developer. Whenever, at the sole discretion of the Engineer, additional tests or data is required beyond that identified as required in these Regulations or on the approved plans, the costs of such tests shall be borne by the Developer. Should such tests or additional data show a failure to meet these Regulations or the approved plans, the Developer shall be responsible for the cost of such testing and data along with all costs associated with repair or replacement of said failure.

8.2.2. USE OF NON-APPROVED MATERIAL

In the event any material or equipment proposed to be used by the Developer is disapproved by the Engineer as not meeting the requirements of these Regulations, said materials or equipment shall not be used on the project. If, after approval of the plans, the Developer desires to change any materials or equipment from that previously approved by the Engineer, said change shall be accomplished only by a written request to the Engineer. Any change must be approved by the Engineer before any materials can be ordered.

8.2.3. PAVEMENT DESIGN REPORT

The Pavement Design Report is required to be completed by a qualified Registered Professional Engineer. This report is required to be submitted to the Town after the overlot grading process and prior to paving of any roadway.

8.2.4. TESTING AGENCY ACCESS AND ASSISTANCE

- 8.2.4.1 The Developer shall allow the testing agency access to the job site at all times; furnish any labor required to assist the Testing Agency in obtaining and handling samples at the source of material and at the project;

provide and maintain, for the sole use of the Testing Agency, adequate facilities for safe storage and proper curing of concrete test specimens on the project site as required by AASHTO T23.

8.2.5 MIX DESIGNS

The Developers shall furnish asphalt mix designs or bituminous concrete mix designs meeting the requirements of these Specifications. Concrete mix design shall be performed according to the provisions of ACI-211 or ACI-304. A separate mix design shall be provided if pumped concrete is used.

8.2.6 REPORTS

Reports shall bear the seal and signature of a Professional Engineer registered in the State of Colorado and competent in the required testing practice. All test reports shall show the location where the test was performed or at which the work or batch represented by the test was placed. Test reports shall include all information specified in the AASHTO or ASTM test procedure used. Improperly completed reports will not be accepted. C.O.'s will not be issued until all final reports indicating compliance with these Specifications are reviewed and placed on file by the Town of Bennett. The Testing Agency personnel are not authorized to stop work, to revoke, alter, relax, enlarge, or release any requirements of the Specifications, nor to approve, accept, or reject any portion of the work on behalf of the Town.

If the State or Federal Government imposes more stringent standards, criteria, or requirements, these shall be incorporated into this document after the due process and public hearing(s) required to modify the Roadway Standards.

8.3 QUALITY CONTROL

(Procedures to measure and report quality)

8.3.1 General

8.3.1.1 All testing methods and procedures performed by the Testing Agency personnel shall be in accordance with the applicable AASHTO and ASTM requirements and procedures. Test reports shall include the AASHTO and ASTM test designations of all tests taken. All testing and retesting services shall be at the expense of the Developer. All retesting due to failing tests shall be at the Developers expense.

8.3.1.2 The testing of all materials and construction shall be in conformance with the appropriate AASHTO, ASTM, or CDOH specifications. A partial list of approved testing methods includes:

TEST PROCEDURE	AASHTO	ASTM
Atterberg Limits (LL & PL)	T 89 & T 90	D 4318
Gradation Analysis (except hydrometer)	T 27	D 422
CBR (as modified in Section 5.2.4.1)	193	—
R-value (subgrade & base)	T 190	D 2844
Marshall Stability	T 245	D 1559
R, Value	T 246	D 1560
Compaction Curve (standard)	T 99	D 698
Compaction Curve (modified)	T 180	D 1557
Compaction Curve (CTAB)	T 134	—
Field Density Test (Sand Cone)	T 191	D 1556
Field Density Test (Nuclear)	T 238/T 239	D2922/D3017
Field Density Test (Balloon)	T 205	D 2167
Concrete Slump	T 119	C 143
Concrete Air Content	T 152	C 231
Concrete Compressive Strength	T 22	C 39
Concrete Sampling	T 141	C 172
Strength of Soil-Lime Mixtures	T 220	—
Asphalt Flow	T 245	D 1559
Air Voids	T 245	D 1559
Profil-o-graph	Colo. Procedure 64-85	
Denver/Colorado/Swell Consolidation Test		

Denver/Colorado/Swell Consolidation Test

- 8.3.1.3 When changes in materials or proportions are encountered during construction; or when work fails to pass test or fails to meet the Specifications additional tests shall be taken as directed by the Town Engineer. Failure of the Developer to furnish satisfactory test data shall be sufficient cause for rejection of the work in question.

8.4 ANCILLARY STRUCTURE TESTING

8.4.1 Utility Trenches, Inlets, Manholes and Junction Boxes Backfilling

8.4.1.1 Materials, Placement, and Compactions

All utility trenches within the R.O.W. shall be placed and compacted in accordance with Section 9.2.6 of these Standards.

8.4.1.2 Testing

Field moisture-density testing shall be performed during backfill operations beginning 1 foot above the top of the pipe and extending to the finished subgrade elevation. A sufficient number of tests shall be taken at various depths to confirm backfill compaction and moisture content specifications are met. As a minimum, one test shall be taken within 1 foot of manholes, water valves or other obstacles. Testing shall be done in accordance with Chapter 9 of this manual.

A Letter of Responsibility as defined in Section 10.1.3 (figure 10.1) may preclude the testing requirements as stated herein.

8.4.1.3 Acceptance

The results of field density tests shall be submitted to and reviewed by the Engineering Division. Provided all tests are acceptable,

the two (2) year probationary period may begin. If no failures of the trenches are evident after two (2) year. the Town will assume maintenance obligations. Any failures must be corrected in accordance with the provisions of Chapter 9.

8.4.2 Curb, Gutter, Sidewalk, Crosspans, and Major Drainage Structures

8.4.2.1 Subgrade Preparation

- a. Subgrades shall be thoroughly compacted to the moisture and density specifications required for the material tested. The surface shall be smooth with no humps or depressions and to the final grade on which the concrete will be placed.
- b. Testing frequency for the subgrade shall be a minimum of each six inch lift on replacement materials with one test for every 250 feet of structure with more tests taken if necessary for control.
- c. These test results shall be submitted to the field representative of the Town Engineer for compliance review.

8.4.2.2 Concrete

- a. Air entrained Class A, B, or D shall be used.
- b. Curing methods shall conform to CDOH standard specifications.
- c. Concrete placement shall include methods which will not reduce the strength or integrity of the final product.
- d. Testing and inspection of concrete
The slump, air content and unit weight tests shall be carried out on the first

truck of concrete for the daily placement and thereafter in conformance with the following table:

TABLE 8.1
TESTING FREQUENCY

ITEM	TESTING FREQUENCY
Sidewalks, Crossspans, curb returns	1 set of 4 cylinders for every 1,000 square yards or fraction thereof of concrete placed
Curbing and Combination curb, gutter and walk	1 set of 4 cylinders for every 1,000 lineal feet or fraction thereof of curb and gutter placed

NOTE: The testing to include the slump (T 119), air entrainment (T 152), temperature of concrete at placement, yield and compressive strength of the cylinders (T 22).

All work done by hand (non-extrusion) shall require a minimum of two (2) sets of tests per day.

- e. These test results shall be submitted to the field representative of the Town Engineer for compliance review.

8.4.2.3 Inspection and Testing at Acceptance

At the discretion of the Town Inspector, the Contractor will provide core test results of concrete at random intervals not averaging less than one test in 500 feet, to verify that specified thickness of concrete was installed.

Testing costs shall be paid for by the Owner/Developer. If the Town Inspector has not been given the opportunity to inspect the subgrade and/or concrete forms prior to placement of the concrete, and at the discretion of the Town Inspector, the Contractor will provide core tests.

8.5 ROADWAY SUBGRADE PREPARATION

8.5.1 Compaction

The subgrade shall be free of organic material and shall be scarified to a depth of 12 inches, moisture treated to within 2 percent (optimum to + 4% for A-6 or A-7-6) of optimum moisture content and compacted. Table 8.2 shall be used to determine compaction.

8.5.2 Testing

Field moisture density tests using acceptable methods will be required at random locations at the rate of one for each 500 lineal feet of paving for each travel lane.

8.5.3 Final Proof Rolling

After the subgrade has been compacted, tested and found to meet Specifications, the entire subgrade shall be proof-rolled with a heavily loaded vehicle to ensure uniformity of the subgrade. The vehicle must have a loaded GVW of 50,000 pounds with a loaded single axle weight of at least 18,000 pounds and a tire pressure of 90 psi. Subgrade which is pumping or deforming must be reworked, replaced or otherwise modified to form a smooth, stable, non-yielding base for subsequent paving courses.. The Engineering Division shall be notified at least 48 hours before final proof-rolling.

TABLE 8.2
MOISTURE DENSITY CONTROL

Soil Classification (AASHTO M 145)	AASHTO T 99 Minimum Relative Compaction (Percent Standard)	AASHTO T 180 Minimum Relative Compaction (Percent Modified)
A-1	100	95
A-3	100	95
A-2-4	100	95
A-2-5	100	95
All Other	95	90

* Chart taken from CDOH Specifications Section 203.11

8.5.4 Acceptance

The results of field density and proof-rolling shall be submitted and reviewed by the Engineering Division. Provided all tests are acceptable, compaction will be approved for the placement of the next paving course. Should testing indicate unsatisfactory work, the necessary reworking, compaction or replacement will be required prior to continuation of the paving process. The approval is valid for 24 hours. Changes in weather such as freezing or precipitation will require approval of the subgrade.

8.6 LIME TREATED SUBGRADE

8.6.1 Materials

Lime treated subgrade shall be used only where a mix design has been previously submitted and approved by the Engineering Division. The requirements of Section 5.5.5.5 shall apply.

8.6.2 Construction

Construction of lime treated subgrade shall be in accordance with the requirements of Section 307 of the CDOH Standard Specifications, except that the curing period shall be a minimum of 48 hours.

8.6.3 Testing

Lime treated subgrade shall be observed and tested on a full-time basis and paid for by the owner/developer. Field moisture-density test shall be taken at the rate of one for each 500 lineal feet of travel lane for each lift. Compaction curves (AASHTO T 220) will be required for each soil type and field density shall be compared to the appropriate curve for percentage compaction determinations. Field compacted 7-day strength and lime content (AASHTO T 232) determinations shall be required for each 500 tons of subgrade treated, with a minimum of one per project.

8.6.4 Acceptance

The results of field density, lime content and strength tests shall be submitted and reviewed by the

Engineering Division. Provided all tests are acceptable, the subgrade will be approved and the next paving course can be placed. Should these tests fail to meet the project specifications, the strength reduction will be used to calculate increased pavement layer or overlay thickness required for the design section.

8.7 AGGREGATE BASE COURSE

8.7.1 Materials

Aggregate Base Course materials must be from a currently approved source and conform to the requirements of Section 5.5.5.3. The owner/developer shall upon request, provide verification of material properties.

8.7.2 Placement and Compaction

Materials shall be placed on an approved subgrade which has been proof-rolled within the past 24 hours and found to be stable and non-yielding. Should weather conditions change such as freezing, precipitation, etc., aggregate base materials shall not be placed until the subgrade is approved.

Aggregate materials shall be placed, moisture treated and compacted as outlined in Section 304 of the CDOH Standard Specifications.

8.7.3 Testing

At least one sample of aggregate base course for each 1000 tons of materials placed shall be tested to determine gradation and Attenberg Limits. Should these tests indicate the material does not meet specifications, the material shall be removed and replaced.

During placement and compaction, Compaction Curves will be required for each material used. Field moisture-density tests shall be taken of each lift of materials at random locations at approximate intervals of 500 feet in each travel lane. At least

20 percent of the tests shall be taken within 1 foot of manholes, valves, and curbs.

8.7.4 Acceptance

The results of field density tests shall be submitted to and reviewed by the Engineering Division. Provided all tests are acceptable, the aggregate base course materials, placement and compaction will be approved and the next paving course can be placed. Should testing indicate unsatisfactory work, the necessary reworking, compaction or replacement will be required prior to continuation of the paving process.

8.8 CEMENT TREATED AGGREGATE BASE COURSE

8.8.1 Materials

Aggregate and cement materials must be from a currently approved source and the mix design shall conform to the requirements of Section 5.5.5.4. The Owner/Developer shall provide verification of material properties and an approved mix design.

8.8.2 Placement and Compaction

Materials shall be placed on an approved subgrade which has been proof-rolled within the past 24 hours and found to be stable and non-yielding. Should weather conditions change such as freezing, precipitation etc., materials shall not be placed until the subgrade is re-approved.

Cement treated aggregate base shall be prepared per the mix design, and placed, moisture treated and compacted as outlined in Section 308 of the CDOH Standard Specifications.

8.8.3 Testing

At least one sample of cement treated aggregate base course for each 1000 tons of material placed shall be tested to determine cement content, gradation and Atterberg Limits. Six field prepared proctor mold samples shall be taken for each 500 tons placed and

tested at 7 and 28 days to determine unconfined compressive strength.

During placement and compaction, Compaction Curves will be required for each material used in accordance with AASHTO T 134. Field moisture-density tests shall be taken of each lift of material at random locations at approximate intervals of 500 feet in each travel lane. At least 20 percent of the tests shall be taken within 1 foot of manholes, valves and curbs.

8.8.4 Acceptance

The results of laboratory tests and field density tests shall be submitted to and reviewed by the Engineering Division. Provided all tests are acceptable, the cement treated aggregate base course materials, placement and compaction will be approved and the next paving course can be placed. Should testing indicate unsatisfactory work, necessary adjustments will be made to the pavement section to comply with original design strength requirements.

8.9 PLANT MIX HOT BITUMINOUS PAVEMENT (HBP)

8.9.1 Materials

All asphalt, aggregate fillers and additives shall be combined to form a mix design in accordance with Section 5.5.5.1. The mix design must be submitted to and approved by the Engineering Division.

8.9.2 Placement and Compaction

Materials shall be placed upon an approved subgrade base course or previous paving course in accordance with Section 400 of the CDOH Standard Specifications. Prime or tack coats shall be applied in accordance with paragraph 8.11.1 of this chapter.

When more than one lift of pavement is required, where possible, the joints or seams between lifts shall be staggered so that joints are separated by at least 2 feet in the horizontal direction.

The bituminous paving mix shall be compacted to at

least 95 percent of the mix determined Marshall density or specified density from Hveem testing to achieve design strength.

8.9.3 Testing

During placement and compaction of plant mix bituminous pavement, observation and testing shall be on a full-time basis. For each 1000 tons of material placed or at least one for each day of production, a field sample shall be taken and subjected to Marshall or Hveem testing, extraction and gradation analysis. Testing intervals may be increased to approximately 1/2 of the daily tonnage to be placed at the discretion of the Town Inspector.

Mix temperatures will be checked on each truck and where the temperature does not meet specifications the load shall not be placed.

During compaction the density of the pavement will be checked randomly at a rate of one test for each 500 lineal feet of travel for each lift.

Either during or after completion of the paving the final pavement thickness shall be determined for the plant mix bituminous pavement using coring, rings or other acceptable methods. Thickness determinations shall be made at random locations at intervals of approximately 500 feet in each travel lane.

- 8.9.4 Profil-o-graph test shall be submitted to, and accepted by, the Engineering Division prior to the beginning of the two year warranty period. This requirement is for collectors and arterials.

8.9.5 Acceptance

The result of Field Density and Laboratory Tests shall be submitted and reviewed by the Engineering Division. Provided all tests are acceptable, the asphalt concrete materials, placement and compaction will be approved. Acceptable results shall be in compliance with tolerances for gradation and extraction found in Tables 5.11 and 5.12. Marshall

stability test results shall average 1,500 lbs. or more. Should testing indicate unsatisfactory work, removal and replacement or overlay work will be required.

Criteria used to determine satisfactory work shall be all for the following:

- a. Ninety percent (90%) of core test must meet or exceed design HBP thickness;
- b. Average of all core test must meet or exceed design HBP thickness;
- c. All core test thickness' must exceed design HBP thickness minus 1/4".

If all these criteria are not met, additional core tests or approved non-destructive testing at the expense of the owner/developer may be required to further delineate the area(s) of unsatisfactory work which will require correction prior to acceptance.

8.10 PORTLAND CEMENT CONCRETE

8.10.1 Materials

All aggregate, Portland cement, fly ash, water, admixtures, curing materials and reinforcing steel shall meet the requirements of Section 5.5.5. All materials shall be combined in accordance with Section 5.5.5 into a mix design and submitted to, and approved by the Engineering Division.

8.10.2 Construction Requirements

Materials shall be proportioned, handled, measured, batched, placed and cured in accordance with Section 412 of the CDOH Standard Specifications.

8.10.3 Testing

- 8.10.3.1 During placement of Portland cement concrete pavement, observation and testing shall be on a full-time basis. For each day of production or every 400 cubic yards placed (or portion

thereof), aggregate samples shall be obtained for gradation of both the coarse and fine aggregates.

8.10.3.2 Slump, air content, unit weight and mix temperature shall be tested every 100 cubic yards of pavement placed. The first three loads shall be tested for slump and air content. If any one test fails to meet requirements, slump and air content tests shall continue until three consecutive loads meet requirements. Thereafter, slump and air shall be tested at least every fifth load.

8.10.3.3 Six compressive strength cylinders shall be fabricated for each 100 cubic yards placed. Cylinders shall be tested as follows: 2 at 7 days, 2 at 28 days, and 2 for back-up, as required by the Engineering Division. Testing interval may be increased to approximately 1/3 of the daily volume to be placed at the discretion of the Town Inspector.

8.10.3.4 Portland cement and fly ash will be accepted on the basis of current certificates of compliance and pre-testing by CDOH. Reinforcing steel, dowels and tie bars will be accepted by certificate of compliance and mill reports. Water, of no potable, shall be sampled and tested before use. Only CDOH approved brands of air entraining agents, chemical admixtures and curing materials may be used and must be documented.

8.10.3.5 Thickness of fresh concrete must be checked every 500 lineal feet in each traffic lane. Any noted deficiency areas shall be corrected at that time. Surface deficiency areas shall be corrected at that time. Surface smoothness shall be tested and corrected as necessary according to CDOH Section 412.16

8.10.3.6 Profil-o-graph tests shall be submitted to,
8.16

and accepted by, the Engineering Division prior to beginning the two year warranty period. This requirement is for collectors and arterials.

8.10.4 Acceptance

All test results shall be submitted and reviewed by the Engineering Division. Provided all tests are acceptable, the pavement will be accepted. Should testing indicate unsatisfactory work, removal and replacement or grinding will be required.

8.11 OTHER MATERIALS

8.11.1 Asphalt Prime and Tack Coats

8.11.1.1 General

- a. Prime coat is the application of a diluted, emulsified asphalt or cutback asphalt (as allowed by federal or state law) to previously prepared aggregate base course or granular soil subgrade prior to placing asphalt concrete. The prime penetrates into the base or subgrade, plugs the voids, binds the fine aggregate to the surface, waterproofs the surface until the asphalt concrete surfacing is placed and helps prevent shoving of the surface following construction.
- b. Tack coat is a very light application of asphalt (usually diluted emulsified asphalt) to ensure a bond between the asphalt concrete being placed and underlying pavement or adjacent features such as gutter faces, valve boxes, manholes and rings. A tack coat prevents a slip plane in overlays and seal joints between the paving and other appurtenances. It must be applied uniformly and lightly. To heavy a tack coat is worse than none at all. A tack coat is used when the surface to be

overlaid is old, glazed, dried out or subjected to dust or traffic film. Tack coats are sometimes omitted between asphalt courses of new pavements if the succeeding course is placed within 24 hours. If the surface of the first course is contaminated by sand, dust or foreign material deposited by traffic or wind, merely brooming is not completely effective. A very light tack coat should be applied after brooming.

8.11.1.2 Materials

Emulsified asphalt of any of the following grades may be used: SS-1, SS-1h, CSS-1 or CSS-1h. All of these shall be diluted 1:1 with water. If dilutions greater than 1:1 are used (2:1, 3:1, etc.) the distributor truck speed can be reduced and a heavier application rate used. A certificate of compliance must be provided by the supplier. Where allowed by federal and state regulations, cutback asphalt may be used upon written permission by the Director of Public Works.

8.11.1.3 Application

- a. Prior to prime coat application, the surface should be allowed to dry to approximately 80% of optimum moisture. Application shall be made with a self propelled pressure distributor capable of uniform distribution at the rate specified. The distributor should be calibrated and equipped hydraulically, or with tie downs, so the spray bar will maintain a uniform height above the surface being primed. The asphalt material shall be applied in the range of 0.20 to 0.40 gallons/square yard. If the surface being primed is very tight textured and appears fairly non-absorbent, use the lower end of the

range. If the surface is more open textured and appears more absorbent, use the higher end of the range. Apply as much material as the surface will absorb in a reasonable period of time. If an excess is applied, use a blotter material (sand or aggregate base material) to absorb the excess.

- b. Tack coat is applied with a self propelled pressure distributor that is in good condition, clean and has been calibrated with nozzles set properly for fan overlap and not plugged. The spray bar should be capable of being set hydraulically, or tied down, so the bar is maintained at a uniform height from the application surface. A 1:1 dilution should be applied at 0.10 gallons/square yard. Greater dilutions should be applied at heavier rates. A wand, or hand spray nozzle attached to the spray bar can be used for applying tack to gutter faces, valve boxes and manholes and rings. In lieu of the wand, a hand sprayer, or as a last resort, a mop and bucket may be used. Care must be taken with the wand, sprayer, and especially with a mop so that a light coating is applied and the emulsion is not sprayed on the surfaces where paving will not be used. Sloppy workmanship will not be tolerated. The tack coat must be evenly distributed over the entire surface. A pneumatic tired roller is an effective piece of equipment used to spread the tack material uniformly.

8.11.1.4 Curing

When applied, emulsified asphalt will be brown in color. When the emulsion breaks it will separate into its two components, asphalt cement, and water, and turn black in color.

Following the break, the water must evaporate before placing asphalt concrete. The prime or tack coat will be sticky, or tacky, when cured. The length of time required for curing will depend on the air temperature, humidity and wind conditions. On a hot, dry, windy day, the prime or tack coat will cure in an hour or so. Cooler, more humid, cloudy and still conditions will extend this time period.

8.11.1.5 Acceptance

Prime or tack coat will be approved by the Engineering Division upon acceptance of mill certifications, visual approval and verification of application rate. Dust or contamination of prime or tack coats will require brooming and reapplication.